

# STRUCTURE AND METHOD OF MAKING HETEROJUNCTION BIPOLAR TRANSISTOR HAVING SELF-ALIGNED SILICON- GERMANIUM RAISED EXTRINSIC BASE

## Abstract

A heterojunction bipolar transistor (HBT) and method of making an HBT are provided. The HBT includes a collector, and an intrinsic base overlying the collector. The intrinsic base includes a layer of a single-crystal semiconductor alloy. The HBT further includes a raised extrinsic base having a first semiconductive layer overlying the intrinsic base and a second semiconductive layer formed on the first semiconductive layer. An emitter overlies the intrinsic base, and is disposed in an opening of the first and second semiconductive layers, such that the raised extrinsic base is self-aligned to the emitter.